

## REMARKS

### A. 35 U.S.C. § 103

#### 1. Hagl et al. and Rehm et al.

##### a. Claims 1-10, 16-21 and 28

Claims 1-10, 16-21 and 28 were rejected under 35 U.S.C. §103 as being obvious in view of Hagl et al. and Rehm et al. Applicants traverse this rejection. In particular, claim 1 recites a method for serial data transmission that includes “always transmitting further data, whose processing is not time-critical, immediately following said transmitting said up-to-date position data.” The Office Action has conceded that Hagl et al. does not disclose “always transmitting further data, whose processing is not time-critical, immediately following said transmitting said up-to-date position data.” The Office Action relies on Rehm et al. for overcoming the deficiencies of Hagl et al. In particular, the Office Action asserts that Rehm et al.’s data accommodated in the intervals FZI and corresponding to processes R10-R13 is non-time critical data that immediately follows the time critical data of processes RZ1 and RZ2. As pointed out in Applicants’ Amendment of October 28, 2005, Rehm et al. only describes the sectoring of processing time so that data associated with time critical processes is processed during periods RZ1, RZ2 and data associated with non-time critical processes is processed during alternating periods FZI. The Office Action relies at page 2 on the following passages of Rehm et al. as suggesting the recited transmission of further data:

in that after the time period corresponding to the running-time limit value has elapsed the subordinate computing process is interrupted in order to process other pending, non-time-critical computing processes, providing no lock assigned to the subordinate

computing process is set,

in that after a greater time period that can be derived from the running-time limit value has elapsed, the subordinate computing process is interrupted in order to process other pending, non-time-critical computing processes, irrespective of whether or not a lock assigned to the subordinate computing process is set,

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FIG. 1 shows a block illustration of a numerical control system based on a real-time system NCK. The real-time system NCK is connected to a machine tool WM, to an input and output unit PC and an information bus BU. A plurality of computing processes are depicted as rectangles Rz1, Rz2, R10, R11, R12, R13 in the real-time system NCK. In this case, the computing processes Rz1 and Rz2 are responsible for the regular and time-critical output of desired values to the drives of the machine tool WM, and the likewise regular and time-critical acquisition of the position and speed transmitter values. Other computing processes are responsible for updating the indicating unit (computing process R13), the polling of the keyboard of the input unit (computing process R11), the reading in of partial programs (computing process R12) and the preparation of NC data on the basis of the partial programs (computing process R10), and are accordingly not time-critical. (Col. 2, ll. 42-53 and Col. 3, ll. 45-61).

The above passages support Applicants' position that Rehm et al. discloses the sectoring of processing time. Furthermore, the passages are silent as to always transmitting "further data, whose processing is not time-critical, immediately following said transmitting said up-to-date position data." Since there is no suggestion in Rehm et al. to alter Hagl et al. to always transmit "further data, whose processing is not time-critical, immediately following said transmitting said up-to-date position data" the rejection is improper.

The rejection should be withdrawn for that additional reason that it is unclear how Hagl et al. is to be altered in view of Rehm et al. in order to always transmit data that is not time-critical immediately following the transmission of up-to-date position data. Without clarity as to how the two references are to be combined, the rejection is improperly using an “obvious to try” standard which is improper. *Gillette Co. v. S.C. Johnson & Son Inc.*, 919 F.2d 720, 725, 16 USPQ2d 1923, 1928 (Fed. Cir. 1990).

Despite the imperfection of the rejection, claim 1 has been canceled and so its rejection has been rendered moot. In addition, claims 2, 3, 5 and 7 have been amended so as to depend from claim 22 instead of claim 1. Consequently, the rejections based on claims 2, 3, 5 and 7 have been rendered moot. Furthermore, the rejections of claims 4, 6, 8-10, 16-21 and 28 are moot since they now depend indirectly on claim 22.

Please note that claims 2, 3, 5 and 7 are being amended to provide additional patent coverage for the method of claim 22. Accordingly, the amendments are not related to patentability as defined in *Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 234 F.3d 558, 56 USPQ2d 1865 (Fed. Cir. 2000) (*en banc*), *overruled in part*, 535 U.S. 722 (2002).

**b. Claims 29-35**

Claims 29-35 were rejected under 35 U.S.C. §103 as being obvious in view of Hagl et al. and Rehm et al. Applicants traverse this rejection for the reasons given in their Amendment filed on October 28, 2005, the entire contents of which are incorporated herein by reference. Despite the imperfection of the rejection, claims 29-35 are being canceled in order to expedite prosecution

of the pending claims. Accordingly, the rejection has been rendered moot and should be withdrawn.

**c. Claims 36 and 38-45**

Claims 36 and 38-45 were rejected under 35 U.S.C. §103 as being obvious in view of Hagl et al. and Rehm et al. Claim 36 recites that related non-time critical data is transmitted “over several blocks, between which up-to date position data is transmitted.” The Office Action has relied on Rehm et al. for overcoming the deficiencies of Hagl et al. However, Rehm et al. is silent whether up-to date position data is transmitted between several blocks of non-time critical data. As mentioned previously in Section A.1.a, FIG. 2 of Rehm et al. discloses when certain non-time-critical processes and time-critical processes are performed (Col. 3, l. 45 – Col. 4, l. 18). There is no mention in Rehm et al. when up-to date position data and various non-time critical data are transmitted in the manner recited in claim 36. Since Rehm et al. does not suggest transmitting related non-time critical data over several blocks between which up-to-date position data is transmitted, the rejection should be withdrawn.

The rejection should be withdrawn for the additional reason that an improper “obvious to try” standard is being applied since it is unclear how Hagl et al. is to be altered in view of Rehm et al. in order to transmit related non-time critical data over several blocks between which up-to date position data is transmitted.

**d. Claims 47, 48 and 50-55**

Claims 47, 48 and 50-55 were rejected under 35 U.S.C. §103 as being obvious in view of Hagl et al. and Rehm et al. Claim 47 recites a system for serial data transmission wherein related non-time critical data is transmitted over several blocks, between which the up-to data position data is transmitted. Since the above language is similar to that of claim 36, the rejection should be withdrawn for reasons similar to those given above in Section A.1.c.

**2. Hagl et al., Rehm et al. and Kurten**

Claims 11-15 were rejected under 35 U.S.C. §103 as being obvious in view of Hagl et al., Rehm et al. and Kurten. Claims 11-15 depend directly or indirectly from claim 1. As mentioned above in Section A.1.a, Rehm et al. does not suggest altering Hagl et al. so as to always transmit “further data, whose processing is not time-critical, immediately following said transmitting said up-to-date position data.” Kurten does not cure the deficiencies of Hagl et al. and Rehm et al. in that Kurten does not suggest altering Hagl et al. so that Hagl et al. always transmits non-time-critical data immediately after transmission of up-to-date position data. Without such suggestion, the rejection is improper and should be withdrawn.

Claims 11 and 12 are patentable for the additional reason that neither Kurten nor Rehm et al. suggest altering Hagl et al. to immediately transmit after interrupting transmission of non-time-critical data a position data request command to the position measuring system in the place of the non-time-critical data, “whereupon said up-to-date position data are immediately transmitted from said position measuring system to said processing unit” as explained in Applicants’ Amendment filed on October 28, 2005, the entire contents of which are incorporated herein by reference. Since there is no suggestion in either Hagl et al., Rehm et al. or Kurten to provide the claimed

transmitting to Hagl et al., the rejection is improper and should be withdrawn.

Claims 14 and 15 are patentable for the additional reason that neither Kurten nor Rehm et al. suggest altering Hagl et al. to transmit after interrupting transmission of non-time-critical data up-to-date position data in the place of the non-time-critical data as explained in Applicants' Amendment filed on October 28, 2005, the entire contents of which are incorporated herein by reference. Since there is no suggestion in either Hagl et al., Rehm et al. or Kurten to provide the claimed transmitting to Hagl et al., the rejection is improper and should be withdrawn.

Despite the impropriety of the rejection, claim 11 and 14 have been amended so as to depend directly on claim 22 so that claims 11-15 depend directly or indirectly on claims 22 and so the rejections of claims 11-15 have been rendered moot.

Please note that claims 11 and 14 are being amended to provide additional patent coverage for the method of claim 22. Accordingly, the amendments are not related to patentability as defined in *Festo*.

### **3. Hagl et al., Rehm et al. and Lennartsson**

Claims 22-24 and 26 were rejected under 35 U.S.C. §103 as being obvious in view of Hagl et al., Rehm et al. and Lennartsson.<sup>1</sup> Claim 22 recites "always transmitting further data, whose processing is not time-critical, immediately following said up-to-date position data from said position measuring system to said processing unit. As mentioned above in Section A.1.a, Rehm et al. does not suggest altering Hagl et al. so as to always transmit "further data, whose processing is not time-critical, immediately following said transmitting said up-to-date position data."

Lennartsson does not cure the deficiencies of Hagl et al. and Rehm et al. in that Lennartsson does

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<sup>1</sup> The Office Action incorrectly refers to U.S. Patent No. 5,371,859 as Kent, the first name of the

not suggest altering Hagl et al. so that Hagl et al. always transmits non-time-critical data immediately after transmission of position data. Without such suggestion, the rejection is improper and should be withdrawn.

The rejection of claim 22 is improper for the additional reason that Hagl et al., Rehm et al. and Lennartsson fail to disclose transmitting several different position request commands, wherein the position request commands are assigned different processing priorities. The Office Action has conceded that Hagl et al. and Rehm et al. fail to disclose transmitting the recited position request commands. Lennartsson does not cure the deficiencies of Hagl et al. and Rehm et al. Lennartsson only generally discloses that a master station of a communication bus can assign access priority to various message data structures. Nowhere does Lennartsson disclose that position request commands are assigned different processing priorities as recited in claim 22.

The rejections of claims 24 and 26 are improper for the additional reason that neither Hagl et al., Rehm et al. nor Lennartsson suggests altering Hagl et al. to use a first position request command for position control that causes transmission of up-to-date position data to be given highest priority and a second position request command for digitizing a workpiece contour that causes transmission of up-to-date position data to be given lower priority. The Office Action has conceded that Hagl et al. does not disclose such position request commands. The Office Action has relied on Lennartsson as solving the deficiencies of Hagl et al. While Lennartsson does disclose transmitting messages with a unique priority it does not disclose nor suggest the particular position request commands recited in claim 24. Since there is no motivation in Lennartsson to alter Hagl et al. to use the claimed position request commands, the rejection should be withdrawn.

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inventor, instead of Lennartsson, the last name of the inventor.

Note that claim 22 has been amended so as to be in independent form. Since the amendment incorporates subject matter that was inherently present in the claim, the amendment is not related to patentability. *See, Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722 (2002).

**4. Hagl et al., Rehm et al., Kurten and Lennartsson**

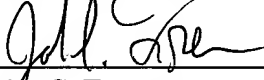
Claims 25 and 27 were rejected under 35 U.S.C. §103 as being obvious in view of Hagl et al., Rehm et al., Kurten and Lennartsson. Claims 25 and 27 depend directly or indirectly from claim 22. As mentioned above in Sections A.1.a and A.2, Rehm et al. does not disclose nor suggest altering Hagl et al. to always transmit non time-critical data immediately after transmission of position data. Neither Kurten nor Lennartsson cure the deficiencies of Hagl et al. in that both do not suggest altering Hagl et al. to always transmit non time-critical data immediately after transmission of position data. Without such suggestion, the rejection is improper and should be withdrawn.

**CONCLUSION**

In view of the arguments above, Applicants respectfully submit that all of the pending claims 2-28, 36, 38-45, 47, 48 and 50-55 are in condition for allowance and seek an early allowance thereof. If for any reason, the Examiner is unable to allow the application in the next Office Action and believes that an interview would be helpful to resolve any remaining issues, he

is respectfully requested to contact the undersigned attorneys at (312) 321-4200.

Respectfully submitted,



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